

Summer 2021 Sustainability Scholars Program Internship Opportunity

The UBC Sustainability Initiative (USI) is pleased to offer current UBC graduate students the opportunity to work on funded sustainability internship projects. Successful candidates work under the mentorship of a partner organization, and are immersed in real world learning where they can apply their research skills and contribute to advancing sustainability across the region.

- Visit the [Sustainability Scholars Program website](#) to learn [how the program works](#) and to [apply](#).
- Be sure to review the [application guide](#) to confirm your eligibility before applying.

Applications close at midnight on Sunday January 31, 2021.

Research project title:

Groundwater Management in Vancouver: A Review of Leading Practices for Local Governments

Project description:

Overview:

Groundwater makes up 99% of all liquid fresh water on earth, and an estimated 2.5 billion people depend solely on it for drinking. Yet groundwater remains a poorly understood and managed resource in Vancouver, despite having many implications for the city and its residents.

Concerns related to groundwater are becoming increasingly common, and include: flooding; impacts on City infrastructure (e.g., reduced sewer capacity); damage to buildings due to flowing artesian conditions and dewatering in peat areas; saltwater intrusion as a result of sea level rise; contaminants such as hydrocarbons, microplastics, and pesticides entering aquifers; and impacts on urban trees, streams, and ecosystem health, including in receiving bodies such as False Creek where groundwater discharges contribute to combined sewer overflow events. Many of these concerns also present significant risks (including financial liability) for the City.

At the same time, managing groundwater offers a number of important opportunities for Vancouver. This includes the potential to use regional aquifers in emergencies (such as earthquakes) to increase the city's resilience, or in droughts as part of the City's climate change adaptation efforts. It may even be possible to augment existing potable water supplies with groundwater (including that which would otherwise be treated as waste) to increase the city's water security, especially as a regional water supply gap has been predicted for as soon as 2030. Managing groundwater would support Vancouver's *Greenest City Action Plan* goal to reduce water consumption. It would also help the City to meet its regulatory obligations, such as limiting groundwater discharges into Metro Vancouver's sewer system.

Currently the City's groundwater-related efforts are quite limited, and consist primarily of irrigating some parks and golf courses with well water, and conducting reviews of proposed developments to minimize groundwater-related risks. As well, several City departments are now looking at groundwater to meet their own objectives. Yet these efforts lack coordination and may not be the most strategic use of the resource. Therefore, the City plans to develop a groundwater management strategy to provide direction across all of its operations. While the creation of a groundwater management strategy was originally

proposed as one of the action items of Vancouver's climate change adaptation plan, the groundwater strategy is envisioned to be comprehensive and will identify all of the actions needed to:

- 1) Characterize local aquifers and hydrogeology, address knowledge gaps, and gain a better understanding of Vancouver's groundwater-related issues and priorities (Understand);
- 2) Identify and successfully engage with key stakeholders to raise the profile of groundwater and develop a coordinated approach to its protection and management (Engage);
- 3) Protect local aquifers from contamination and depletion, as well as urban streams, trees, and ecosystems that rely on groundwater (Protect);
- 4) Manage groundwater so that it can be utilized sustainably, including in emergencies and as part of the City's climate change adaptation efforts (Manage); and
- 5) Realize additional goals as identified through the Scholar's research or subsequent stakeholder engagement

Other jurisdictions in Canada and around the world have already developed groundwater plans and strategies. For example, the Township of Langley uses their aquifer for at least 50% of its water needs. San Francisco utilizes groundwater for drinking, non-potable uses, as well as emergencies. The City of Vancouver would like to learn from these and other jurisdictions regarding their groundwater management efforts.

Purpose of the Project:

The purpose of this project is to undertake a high-level jurisdictional review of leading municipal and regional groundwater management strategies, plans, and policies, so that the City of Vancouver can identify what has worked elsewhere. The research undertaken by the Scholar will be used as an important input during the development of Vancouver's groundwater management strategy, which is anticipated to begin in the fall of 2021. The research will also assist Vancouver in its efforts to become a water sensitive city.

Deliverables:

The Scholar will deliver a final report containing a summary of their completed work, complemented by a presentation via WebEx to key City staff. The report should include:

- The results of a small survey of groundwater experts to identify what they see as challenges, opportunities, and priorities for municipal and regional groundwater management, as well as to solicit their suggestions for noteworthy strategies, plans, and policies to include in the jurisdictional review. (Note: contact info will be provided, and the survey can be conducted online or by phone)
- A high-level jurisdictional review of relevant municipal (and to a lesser extent, regional) groundwater management strategies, plans, and policies, including with respect to hydrogeological research, aquifer and ecosystem protection, stakeholder engagement, groundwater utilization, and climate change adaptation. The review should include the highlights of each jurisdiction's strategy/plan/policies.
- Recommendations for any identified leading practices that could be incorporated into Vancouver's groundwater management strategy
- A final report or executive summary for the online Scholars Project Library

Time Commitment:

- This project will take 250 hours to complete.

SUSTAINABILITY SCHOLARS PROGRAM

- This project must be completed between May 3 – August 13
- The Scholar is to complete hours between 9 am and 5 pm Monday to Friday, approximately 20 hours per week.

Required/preferred Skills and Background

- Excellent research and writing skills
- Demonstrated interest in sustainability
- Familiarity with research methodologies and survey techniques
- Strong analytical skills
- Ability to work independently
- Deadline oriented
- Project management and organizational skills
- Comfortable interacting with strangers to conduct phone interviews
- Familiarity developing and implementing online surveys
- Comfortable reviewing and analysing policy
- Interest in or familiarity with water resource management, hydrogeology, or sustainable technologies, an asset

Applications close **midnight Sunday January 31, 2021**

Apply here: [Click here to apply](#)

Contact Karen Taylor at sustainability.scholars@ubc.ca if you have questions

Useful Resources

We are holding a special **resume preparation workshop for prospective Scholars** on January 19. [Click here for details and to register.](#)

Below are some links to useful resources to help you with your resume and cover letter (there are many more online). Some of these resources also provide information on preparing for your interview.

<https://students.ubc.ca/career/career-resources/resumes-cover-letters-curricula-vitae>

<https://www.grad.ubc.ca/current-students/graduate-pathways-success>

<https://www.grad.ubc.ca/cover-letter-cv-resume-templates-ubc-career-services>